

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

N620726608

FACILITY: SMITHS CREEK LANDFILL	SRN / ID: N6207
LOCATION: 6779 SMITHS CREEK ROAD, SMITHS CREEK	DISTRICT: Southeast Michigan
CITY: SMITHS CREEK	COUNTY: SAINT CLAIR
CONTACT: Matt Williams , Landfill Manager	ACTIVITY DATE: 08/25/2014
STAFF: Rebecca Loftus	COMPLIANCE STATUS: Compliance
SOURCE CLASS: MAJOR	
SUBJECT: See also SRN: P0262, Blue Water Renewables Landfill Gas to Energy Plant. These are one stationary source.	
RESOLVED COMPLAINTS:	

On August 25, 2014, Jill Zimmerman and I, Rebecca Loftus, from the Department of Environmental Quality's (DEQ), Air Quality Division (AQD) Smiths Creek Landfill, State Registration Number (SRN): N6207, located at 6779 Smiths Creek Road, in Smiths Creek, St. Clair County, Michigan. The purpose of this inspection was to determine Smith Creek's compliance with the Federal Clean Air Act Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act of 1994, PA 451, as amended, Michigan's Air Pollution Control Rules, and Renewable Operating Permit (ROP) number MI-ROP-N6207-2012.

Below is a summary of my findings during my inspection and file review.

Contacts

We arrived on site and met with the following staff:

Matt Williams, Site Manager, 810-989-6979, mwilliams@stclaircounty.org

Erin Berish, CTI Project Engineer, 2484865100, eberish@cticompanies.com

Facility Overview

Smiths Creek Landfill (SRN: N6207) is a Type II Sanitary Landfill, owned and operated by St. Clair County. Blue Water Renewables (operated by DTE Biomass) owns an electric generating facility located at the landfill that utilizes the landfill gas as fuel. Previously, an agreement was made between AQD management, St. Clair County, and Blue Water Renewables, which allowed the two entities to have separate ROPs and SRNs; together these entities comprise one single stationary source.

The landfill opened in 1967 and has a design capacity of 12.6 million cubic yards (9.7 million Mg). Since the landfill has a design capacity of greater than 2.5 million Mg and has estimated its Non-Methane Organic Compound (NMOC) emissions to be greater than 50 Mg per year, Smiths Creek is subject to the National Standards of Performance for Municipal Solid Waste Landfills, 40 CFR Part 60 Subpart WWW, and the National Emission Standards for Hazardous Air Pollutants for Municipal Solid Waste Landfills, 40 CFR Part 63 Subpart AAAA, and is permitted under ROP No. MI-ROP-N6207-2012.

The original 56 acre landfill was located on the north side of the property. This portion of the landfill is closed and does not have synthetic liner, nor an active gas collection system.

In the newer portion of the landfill (post 1989), municipal solid waste, construction debris, asbestos-containing wastes, and ash are deposited in one of the cells; at the time of my

inspection waste was being placed in Cell #7. Smith's Creek also operates a bioreactor (Cell #3) as part of a Research Development and Design Project.

Currently, Smiths Creek owns approximately 265 acres (160 acres permitted for solid waste), has 98 extraction wells, and is collecting LFG at flow rates of approximately 1000 scfm. The collected LFG goes to the on-site blower building and can be routed to one of two flares or to the Blue Water Renewable Engine Plant.

The ROP for Smiths Creek has enforceable limits/conditions for the following: EULANDFILL, EUALGCS, EUOPENFLARE, EUVENTFLARE, EUBIOREACTOR, EUASBESTOS, and FGEMERGEN.

Landfill/Gas Collection System

Smiths Creek ROP has two sections covering the landfill and gas collection system, EULANDFILL and EUALGCS. During my inspection, Smiths Creek provided me with copies of the surface methane monitoring reports, monthly integrity checks, waste acceptance rates/design capacity, and the LFG NSPS parameters reports (see attached documents). The records provided are needed to demonstrate compliance with the ROP and federal landfill regulations. Summaries of the reviewed reports have been provided below.

The 1st and 2nd quarterly methane surface scans were conducted on March 25, 2014, and June 20, 2014 (see attached reports). Both reports indicate that the following areas were traversed: the Interim Cover, Cell B, Cell2, Cell2B, Cell 3A, Cell 3B, Cell 5, and Cell 6. There were no locations at Smiths Creek had an initial measured surface concentration of methane greater than 500 part per million.

According to the records, integrity checks of the landfill cover are conducted on a monthly basis. These records indicated where corrective actions are needed (see attached copies for June and July 2014).

For 2013, Smiths Creek had the following acceptance rates: 164,048 Mg/year and 180,453 tons/year. The current permitted design capacity approved by staff in DEQ's Waste Division is 24,503,574 mega grams.

Smith Creek's wellfield currently consists of 98 extraction points; all of which are subject to the NSPS. On a monthly basis, Smiths Creek monitors temperature, oxygen, and pressure for each well (see the attached data). According to these records and Smiths Creek's semi-annual reports, they are properly documents instances in which wells have temperature, oxygen, and/or pressure exceedances. In the instances in which an exceedance cannot be corrected within 15 days, Ms. Berish has requested higher operating variance, alternative timelines, and/or to decommission wells (see file for individual request). During my inspection, no wells were currently operating under a NSPS variance.

According to Ms. Berish, the last updated GCCS Plan was reviewed by the DEQ in 2012/2013.

Open Flares

The landfill is currently producing approximately 1000 scfm of LFG. Each of the RICE engines operated by Blue Water Renewables has the capacity of combusting 500 scfm of LFG.

Therefore, unless either of the RICE engines are malfunctioning or shut down for scheduled maintenance, all of the LFG produced by the landfill is combusted by the engines.

Smiths Creek does have two open flares: a 10" diameter flare with a 2000 scfm capacity, a 3" diameter flare with a 30-200 scfm capacity. When in operation the flow and temperature are recorded every 15 minutes as required by the ROP. Blue Water Renewables keeps electronic copies of the data for the flares; Smiths Creek still maintains the flow/temp data chart at the flares.

For 2013, the 10" flare consumed 6.3 MMscf and the 3" flare consumed 3.1 MMscf. The open flares were not operating during my inspection.

Vent Flares

In addition to the two open flares, Smiths Creek has six self-igniting solar flares on the closed section of the landfill. Due to the age of the waste, no active gas collection system was required to be installed in this area. In lieu of an active gas collection system, Smiths Creek installed the solar powered flares; approved by the EPA on July 16, 2002. These flares serve as conduits to release gas pressure and are equipped with a spark plug which ignites the LFG in the combustion zone of the flare. A thermocouple and data logger monitors the operation of each flare.

Although most of these flares run intermittently, or not at all, at the time of my inspection solar flare #6 was burning. Smith's Creek provided me with copies of the weekly solar flare inspections (see attached). The weekly inspections and data recorders are needed to show compliance with permit conditions.

Bio-reactor

The bioreactor is being operated as a Research Development and Design Project. Leachate and septage is being added to the waste to accelerate the degradation process and to increase the production of LFG. Initially the bioreactor was divided into two cells: Cell 3B for leachate recirculation and Cell 3A for septage addition. Two large bladder tanks are located near cell #3 and the material is gravity fed into a pump system located within the cells.

Recently, Smith's Creek was permitted by DEQ's Waste division to expand the bio-reactor into co-mingled waste in cells #4 and #7. At the time of my inspection, they were beginning to fill cell #7 and were placing the liner in cell #4.

Based on the well data and moisture content provided, the Bio-reactor appears to be meeting the conditions established in the ROP.

Asbestos

Smiths Creek does accept asbestos containing waste. These activities are permitted in the ROP under EUASBESTOS. When asbestos waste is accepted, the coordinates are recorded on the site map and when a well is needed, they avoid the area containing the asbestos waste. At this time, Smiths Creek appears to be in compliance with the conditions listed in EUASBESTOS.

Emergency Generators

FGEMERGENS consists of two existing stationary liquid petroleum gas-fired (LPG) reciprocating internal combustion engines rated at less 500 horsepower. The engines are used for emergency/back-up electric generation and are subject to 40 CFR, Part 63, Subpart ZZZZ, the National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE).

One generator is located by the scale house/office and one is near the septage building. The hours of operation for the scale house generator were incorrect as a short in the system allowed the hour meter to run continuously without the generator running; Mr. Williams stated they will be fixing this. The total hours on the septage building generator were 12.6.

During my inspection, Mr. Williams stated that in the next month or two the generators will be switched over to natural gas as the city is providing service to the landfill (making the propane obsolete).

Ms. Berish had concerns about NESHAP ZZZZ applicability and the changing of the source-wide HAP classification to a Major Source of HAP Emissions. Because of the size of the generators and the fact that they are emergency use only, Smith's Creek does not anticipate any additional requirements. I explained that they should start keeping a log of testing vs emergency engine run time and that we should update the ROP in the next renewal to reflect any changes.

MAERS

For 2013, Smiths Creek reported the following emissions:

Pollutant	Tons
CO	15.7
NOx	0.9
PM10	0.4
PM2.5	0.4
SO2	1.2
VOC	0.13

The reported emissions appear to be consistent with the records reviewed.

Other Equipment

The leachate is sent to the pre-treatment building located next to the engine plant. This is operated by DWSD and appears to be exempt from obtaining a permit to install pursuant to Rule 285(m).

Conclusion

Based on information gathered during the inspection and records reviewed, Smiths Creek appears to be in compliance with the Federal Clean Air Act, Michigan's Air Pollution Control Rules, and the conditions of ROP No. MI-ROP-N6207-2012.

NAME Rebecca J. Hill

DATE 9/26/14

SUPERVISOR CJE